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STRUCTURE FILE UPDATES: 7 JAN 2008 HIGHEST RN 960112-28-1  
 DICTIONARY FILE UPDATES: 7 JAN 2008 HIGHEST RN 960112-28-1

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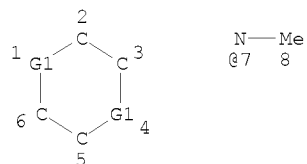
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<http://www.cas.org/support/stngen/stndoc/properties.html>

=> d que sta l14  
 L10 958692 SEA FILE=REGISTRY ABB=ON PLU=ON 46.383.1/RID  
 L12 STR



VAR G1=NH/7  
 NODE ATTRIBUTES:  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 8

STEREO ATTRIBUTES: NONE  
 L14 10973 SEA FILE=REGISTRY SUB=L10 SSS FUL L12

100.0% PROCESSED 958675 ITERATIONS 10973 ANSWERS  
 SEARCH TIME: 00.00.04

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 FILE 'HCAPLUS' ENTERED AT 21:35:40 ON 08 JAN 2008  
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FILE COVERS 1907 - 8 Jan 2008 VOL 148 ISS 2  
 FILE LAST UPDATED: 7 Jan 2008 (20080107/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate  
substance identification.

=> d bib abs hitstr 120 tot

L20 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2008 ACS on SIN  
AN 2005:371235 HCAPLUS  
DN 142:1412276  
TI High-purity piperazine pyrophosphate and method for producing same  
IN Kinura, Ryoji; Murase, Hisashi; Nagahama, Masaru; Kaminoto, Tetsuo;  
Nakano, Shinji  
PA Asahi Denka Co., Ltd., Japan  
SO PCT Int. Appl., 17 pp.  
CODEN: PXX32  
DT Patent  
LA Japanese  
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO2005037806	A1	20050428	2004WO-JP12379	20040827 <--
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, ME, MG, MK, MN, MW, MX, MY, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	BW, GH, GM, KE, LS, MW, ME, NA, SD, SL, SE, TE, US, ZM, ZW, AM, AE, BY, EG, KE, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
JP2005120021	A	20050512	2003JP-0356864	20031016 <--
EP---1674459	A1	20060628	2004EP-072335	20040827 <--
R:	DE, FR, GB			
CN---1845913	A	20061011	CN 2004-80025644	20040827 <--
IN2005KN02679	A	20061103	2005IN-KN02679	20051222 <--
US2006167256	A1	20060727	2006US-0563478	20060105 <--
PRAI 2003JP-0356864	A	20031016	<--	
2004WO-JP12379	W	20040827	<--	
AB	Piperazine diphosphate (I) is dehydrated to prepare piperazine pyrophosphate (II) for fireproofing agents for plastics. Thus, I was extruded to give II and added to a polypropylene composition			
IT	66034-17-1P, Piperazine monopyrophosphate RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PREP (Preparation); USES (Uses) (high-purity piperazine pyrophosphate for fireproofing agents for plastics)			
RN	66034-17-1 HCAPLUS			
CN	Diphosphoric acid, compd. with piperazine (1:1) (CA INDEX NAME)			
CM	1			
CRN	2466-09-3			
CMF	H4 O7 P2			



CM 2  
CRN 110-85-0  
CMF C4 H10 N2



L20 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2008 ACS on SIN (Continued)  
IT 52978-33-3, Piperazine diphosphate  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(high-purity piperazine pyrophosphate for fireproofing agents for plastics)  
RN 52978-33-3 HCAPLUS  
CN Piperazine, phosphate (1:2) (CA INDEX NAME)  
CM 1  
CRN 7664-38-2  
CMF H3 O4 P



CM 2  
CRN 110-85-0  
CMF C4 H10 N2



RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d bib abs hitstr 125 tot

L25 ANSWER 1 OF 18 HCAPLUS COPYRIGHT 2008 ACS on STN  
AN 2005:962339 HCAPLUS

DN 143:249125  
TI Flame-retardant compositions with enhanced fluidity and flame-retardant resin compositions and moldings thereof  
IN Murase, Hisashi; Nagahama, Masaru; Yoshikawa, Kenichi; Tanaka, Yuki; Kaneda, Takayoshi; Yamaki, Akihiro  
PA Asahi Denka Co., Ltd., Japan  
SO PCT Int. Appl., 32 pp.  
CODEN: PIXXD2  
DT Patent  
LA Japanese  
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO2005080494	A1	20050901	2005WO-IP03260	20050222 <--
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DE, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, ME, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, UA, US, US, VC, VN, YU, ZA, ZM, ZW				
PW: BW, CH, CM, KE, LS, MW, NE, NA, SD, SL, SE, TG, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP----179800	A1	20061108	2005EP-0710771	20050222 <--
EP----179800	B1	20080102		
R: DE, FR, GB				
CN----1922260	A	20070228	CN 2005-80005684	20050222 <--
KR2007009566	A	20070118	2006KR-0716957	20060823 <--
US2007176154	A1	20070802	2006US-0590350	20060823 <--
PRAI 2004JP-048664	A	20040224	<--	
2005WO-IP03260	M	20050222		
AB Flame retardants containing phosphate, pyrophosphate, and polyphosphate of piperazine (I) and phosphate, pyrophosphate, and polyphosphate of melamine (II) are treated with silicone oil to reduce the secondary aggregation and improve the powder property, water resistance, and resin dispersibility. Thus, 1:1 (molar) I pyrophosphate 50, 2:1 (molar) II pyrophosphate 50, and KF 96 1 part were mixed to prepare a fire retardant.				
IT 66034-17-1, 1:1 Piperazine pyrophosphate				
RL: MOA (Modifier or additive use); USES (Uses)				
(flame-retardant comps. containing phosphates of piperazine and melamine treated with silicone oil for enhanced fluidity)				
RN 66034-17-1	HCAPLUS			
CN	Diphosphoric acid, compd. with piperazine (1:1)	(CA INDEX NAME)		
CM	1			
CRN	2466-09-3			
CMF	H4 07 P2			



CM 2

CRN 110-85-0  
CMF C4 H10 N2

L25 ANSWER 2 OF 18 HCAPLUS COPYRIGHT 2008 ACS on STN  
AN 2005:212457 HCAPLUS

DN 143:281159  
TI Thermoplastic resin compositions with good rigidity and impact and chemical resistance, and their moldings  
IN Uswatari, Masaaki; Iwasaki, Yoshihiro  
PA Techno Polymer Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 20 pp.  
CODEN: JKKXAF  
DT Patent  
LA Japanese  
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP2005060537	A	20050310	2003JP-0292786	20030813 <--
PRAI 2003JP-0292786		20030813	<--	
AB The comps. comprise (a) styrene polymers 5-94, (b) polyolefins 5-94, and (c) block polymers (AB)nA or (AB)mX (A = aromatic vinyl polymer block; B = diene-aromatic vinyl copolymer block; X = coupler residue; m, n = 1-5) 1-60% (a + b + c = 100), wherein the B block contains 1-10 taper blocks where the aromatic vinyl component content gradually changes. Thus, a composition comprising acrylonitrile-butadiene-styrene graft copolymer, acrylonitrile-styrene copolymer, styrene-butadiene-styrene-styrene triblock copolymer having 3 taper blocks in the middle block, and a propylene block copolymer (Novatec BC 6C) showed rigidity 1510 MPa and Charpy impact strength 12 kJ/m2.				
IT 66034-17-1, Piperazine pyrophosphate (1:1)				
RL: MOA (Modifier or additive use); TDM (Technical or engineered material use); USES (Uses)				
(fireproofing agent; aromatic vinyl block copolymers having taper blocks for moldings with good rigidity and impact and chemical resistance)				
RN 66034-17-1	HCAPLUS			
CN	Diphosphoric acid, compd. with piperazine (1:1)	(CA INDEX NAME)		
CM	1			
CRN	2466-09-3			
CMF	H4 07 P2			



CM 2

CRN 110-85-0  
CMF C4 H10 N2



L25 ANSWER 1 OF 18 HCAPLUS COPYRIGHT 2008 ACS on STN (Continued)

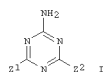


RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 3 OF 18 HCAPLUS COPYRIGHT 2008 ACS on STN  
AN 2004:695489 HCAPLUS

DN 141:226372  
TI Fire-resistant polymer compositions with good moldability  
IN Hachimaki, Akihiro; Furukawa, Takashi; Nakajima, Kazuo  
PA Asahi Denka Kogyo K. K., Japan  
SO Jpn. Kokai Tokkyo Koho, 28 pp.  
CODEN: JKKXAF  
DT Patent  
LA Japanese  
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP2004238568	A	20040826	2003JP-0031132	20030207 <--
PRAI 2003JP-0031132		20030207	<--	
GI	MARPAT 141:226372			



AB The comps. contain (A) phosphate salts [HO{P(=O)(OH)O}nH]Xip [X1 = ammonia, triazine derivative I; Z1, Z2 = OH, SH, Cl-10 alk(en)yl, Ph, vinyl, NR1'R2'; R1', R2' = H, Cl-6 alkyl, methylol; n = 1-100; 0 < p ≤ (n + 2)]; (B) phosphate salts IIq[HO{P(=O)(OH)O}nH] [I1 = R1R2R3N(CH2)nNR3R4, piperazine, piperazine ring-containing diamine; R3-R4 = H, Cl-5 alkyl; m = 1-10; r = 1-100; 0 < q ≤ (r + 2)], and (C) phosphate esters (HO)2P(=O)O(R6)O(R5) or HOP(=O)[O(R6)O(R5)]2 [R5 = C6-24 alk(en)yl; R6 = C2-6 alkylene; n = 0-20] or their metal salts. Thus, a composition containing a polypropylene composition 70.0, melamine pyrophosphate 11.8, piperazine pyrophosphate 17.7, Aerosil R 792 (silica) 0.3, stearic acid 0.15, and lauryl phosphate 0.3 part was kneaded and pelletized, resulting in no burned resin formation around a die at extrusion and UL-94 flammability of its injection molding rating V-0.

IT 66034-17-1P, Piperazine pyrophosphate (1:1)  
RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PREP (Preparation); USES (Uses)

(fire-resistant polymer comps. with good moldability)

RN 66034-17-1 HCAPLUS

CN Diphosphoric acid, compd. with piperazine (1:1) (CA INDEX NAME)

CM 1

CRN 2466-09-3

CMF H4 07 P2



CM 2

CRN 110-85-0  
CMF C4 H10 N2



L25 ANSWER 3 OF 18 HCAPLUS COPYRIGHT 2008 ACS on STN (Continued)

AN 2004:60551 HCAPLUS

DN 140:60551

TI Flame retarder compositions and flame retardant resin compositions

containing the compositions

IN Kuzumetani, Haruki; Yamaki, Akihiro; Kimura, Ryoji

PA Asahi Denka Co., Ltd., Japan

SO PCT Int. Appl., 33 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO. KIND DATE APPLICATION NO. DATE

PI WO2004000973 A1 20031231 2003WO-JP07423 20030611 &lt;--

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BE, CA, CH, CN,

CO, CR, CU, CE, DE, DK, DM, DS, EC, EE, ES, FI, GB, GD, GE, GH,

GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,

LS, LI, LV, MA, MD, MG, MK, MN, MW, MX, ME, NO, NE, OM, PH,

PL, PT, RO, RU, SC, SD, SE, SG, SK, SI, TJ, TM, TN, TR, TT, TE,

UA, UG, US, UE, VC, VN, YU, ZA, ZM, ZW

RW: GH, GM, KE, LS, MW, ME, SD, SL, SZ, TZ, UG, ZM, AM, AZ, BY,

KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES,

FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR,

BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

AU2003244110 A1 20040106 2003AU-0244110 20030611 &lt;--

EP----1516907 A1 20050323 2003EP-0760865 20030611 &lt;--

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,

IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK

CN----1662629 A 20050831 2003CN-0814904 20030611 &lt;--

TW----271417 B 20070121 TW 2003-92117118 20030624 &lt;--

IN2004KN01939 A 20060714 2004IN-KN01939 20041216 &lt;--

US2005256234 A1 20051117 2004US-0518512 20041221 &lt;--

PRAI 2003JP-0182418 A 20030624 &lt;--

2003WO-JP07423 W 20030611 &lt;--

OS MARPAT 140:60551

AB Flame retarder comps. free from secondary coagulation and requiring no

halogenated flame retarders comprise two types of phosphate compds.,

silicon dioxide or a metal oxide, and  $\geq 1$  of higher aliphatic

carboxylic acids, metal salts thereof, higher fatty acid amide compds.,

and esters from monohydric or polyhydric alcs. and higher aliphatic

carboxylic acids. Thus, a flame retardant for a polypropylene composition

contained 1:1 pyrophosphoric acid-melamine 40.0, 1:1 pyrophosphoric

acid-piperazine 60.0, Aerosil R 972 1.0, and stearic acid 0.5 part.

66034-17-1

RI: MOA (Modifier or additive use); USES (Uses)

(flame retarder comps. containing phosphates and oxides and aliphatic

carboxylic acids and fatty acid amide and esters for polyolefins)

RN 66034-17-1 HCAPLUS

CN Diphosphoric acid, compd. with piperazine (1:1) (CA INDEX NAME)

CM 1

CRN 2466-09-3

CMF H4 O7 P2



CM 2

CRN 110-85-0

CMF C4 H10 N2



L25 ANSWER 4 OF 18 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2004:670625 HCAPLUS

DN 141:182261

TI Piperazine-1,4-diium dihydrogendiphosphate

AU Charrel, Miriam; Jouini, Amor; Pierrot, Marcel

CS Laboratoire de Chimie du solide, Departement de Chimie, Faculte des

Sciences de Monastir, Universite du centre, Monastir, 5000, Tunisia

SO Acta Crystallographica, Section C: Crystal Structure Communications (

1998), C54(8), 11, IUCR00042

CODEN: ACSCEB; ISSN: 0108-2701

URL: http://journals.iucr.org/c/issues/1998/08/00/issconts.html

PB Munksgaard International Publishers Ltd.

DT Journal

LA English

AB Crystals of the title compound, (C4H12N2)H2P2O7, are monoclinic, space group

P21/c, with a = 11.749(2), b = 6.849(2), c = 12.592(2) Å,  $\beta$ 91.80(3)°; Z = 4, d<sub>c</sub> = 1.732, d<sub>m</sub> = 1.71; R = 0.032, R<sub>w</sub>(F<sub>2</sub>) = 0.087

for 2005 reflections. The compound has a typical layer organization built

by organic and inorg. groups centered by planes parallel to (100). Unit

formula consists of one acidic anion and two half organic cations crystallog.

independent. H2P2O7 has no internal symmetry whereas the piperazinium

cations are centrosym. Inorg. layers are built by strong H bonds. The

cohesion of the structure results from a network of a weak H bonds.

66034-17-1, Piperazine-1,4-diium dihydrogen pyrophosphate

RI: PRP (Properties)

(crystal structure of)

RN 66034-17-1 HCAPLUS

CN Diphosphoric acid, compd. with piperazine (1:1) (CA INDEX NAME)

CM 1

CRN 2466-09-3

CMF H4 O7 P2



CM 2

CRN 110-85-0

CMF C4 H10 N2



RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 5 OF 18 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2004:2983 HCAPLUS

DN 140:60551

TI Flame retarder compositions and flame retardant resin compositions

containing the compositions

IN Kuzumetani, Haruki; Yamaki, Akihiro; Kimura, Ryoji

PA Asahi Denka Co., Ltd., Japan

SO PCT Int. Appl., 33 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO. KIND DATE APPLICATION NO. DATE

PI WO2004000973 A1 20031231 2003WO-JP07423 20030611 &lt;--

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BE, CA, CH, CN,

CO, CR, CU, CE, DE, DK, DM, DS, EC, EE, ES, FI, GB, GD, GE, GH,

GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,

LS, LI, LV, MA, MD, MG, MK, MN, MW, MX, ME, NO, NE, OM, PH,

PL, PT, RO, RU, SC, SD, SE, SG, SK, SI, TJ, TM, TN, TR, TT, TE,

UA, UG, US, UE, VC, VN, YU, ZA, ZM, ZW

RW: GH, GM, KE, LS, MW, ME, SD, SL, SZ, TZ, UG, ZM, AM, AZ, BY,

KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES,

FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR,

BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

AU2003244110 A1 20040106 2003AU-0244110 20030611 &lt;--

EP----1516907 A1 20050323 2003EP-0760865 20030611 &lt;--

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,

IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK

CN----1662629 A 20050831 2003CN-0814904 20030611 &lt;--

TW----271417 B 20070121 TW 2003-92117118 20030624 &lt;--

IN2004KN01939 A 20060714 2004IN-KN01939 20041216 &lt;--

US2005256234 A1 20051117 2004US-0518512 20041221 &lt;--

PRAI 2003JP-0182418 A 20030624 &lt;--

2003WO-JP07423 W 20030611 &lt;--

OS MARPAT 140:60551

AB Flame retarder comps. free from secondary coagulation and requiring no

halogenated flame retarders comprise two types of phosphate compds.,

silicon dioxide or a metal oxide, and  $\geq 1$  of higher aliphatic

carboxylic acids, metal salts thereof, higher fatty acid amide compds.,

and esters from monohydric or polyhydric alcs. and higher aliphatic

carboxylic acids. Thus, a flame retardant for a polypropylene composition

contained 1:1 pyrophosphoric acid-melamine 40.0, 1:1 pyrophosphoric

acid-piperazine 60.0, Aerosil R 972 1.0, and stearic acid 0.5 part.

66034-17-1

RI: MOA (Modifier or additive use); USES (Uses)

(flame retarder comps. containing phosphates and oxides and aliphatic

carboxylic acids and fatty acid amide and esters for polyolefins)

RN 66034-17-1 HCAPLUS

CN Diphosphoric acid, compd. with piperazine (1:1) (CA INDEX NAME)

CM 1

CRN 2466-09-3

CMF H4 O7 P2



CM 2

CRN 110-85-0

CMF C4 H10 N2



L25 ANSWER 5 OF 18 HCAPLUS COPYRIGHT 2008 ACS on STN (Continued)

AN 2004:2983 HCAPLUS

DN 140:60551

TI Flame retarder compositions and flame retardant resin compositions

containing the compositions

IN Kuzumetani, Haruki; Yamaki, Akihiro; Kimura, Ryoji

PA Asahi Denka Co., Ltd., Japan

SO PCT Int. Appl., 33 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO. KIND DATE APPLICATION NO. DATE

PI WO2004000973 A1 20031231 2003WO-JP07423 20030611 &lt;--

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BE, CA, CH, CN,

CO, CR, CU, CE, DE, DK, DM, DS, EC, EE, ES, FI, GB, GD, GE, GH,

GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,

LS, LI, LV, MA, MD, MG, MK, MN, MW, MX, ME, NO, NE, OM, PH,

PL, PT, RO, RU, SC, SD, SE, SG, SK, SI, TJ, TM, TN, TR, TT, TE,

UA, UG, US, UE, VC, VN, YU, ZA, ZM, ZW

RW: GH, GM, KE, LS, MW, ME, SD, SL, SZ, TZ, UG, ZM, AM, AZ, BY,

KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES,

FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR,

BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

AU2003244110 A1 20040106 2003AU-0244110 20030611 &lt;--

EP----1516907 A1 20050323 2003EP-0760865 20030611 &lt;--

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,

IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK

CN----1662629 A 20050831 2003CN-0814904 20030611 &lt;--

TW----271417 B 20070121 TW 2003-92117118 20030624 &lt;--

IN2004KN01939 A 20060714 2004IN-KN01939 20041216 &lt;--

US2005256234 A1 20051117 2004US-0518512 20041221 &lt;--

PRAI 2003JP-0182418 A 20030624 &lt;--

2003WO-JP07423 W 20030611 &lt;--

OS MARPAT 140:60551

AB Flame retarder comps. free from secondary coagulation and requiring no

halogenated flame retarders comprise two types of phosphate compds.,

silicon dioxide or a metal oxide, and  $\geq 1$  of higher aliphatic

carboxylic acids, metal salts thereof, higher fatty acid amide compds.,

and esters from monohydric or polyhydric alcs. and higher aliphatic

carboxylic acids. Thus, a flame retardant for a polypropylene composition

contained 1:1 pyrophosphoric acid-melamine 40.0, 1:1 pyrophosphoric

acid-piperazine 60.0, Aerosil R 972 1.0, and stearic acid 0.5 part.

66034-17-1

RI: MOA (Modifier or additive use); USES (Uses)

(flame retarder comps. containing phosphates and oxides and aliphatic

carboxylic acids and fatty acid amide and esters for polyolefins)

RN 66034-17-1 HCAPLUS

CN Diphosphoric acid, compd. with piperazine (1:1) (CA INDEX NAME)

CM 1

CRN 2466-09-3

CMF H4 O7 P2



CM 2

CRN 110-85-0

CMF C4 H10 N2



RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 6 OF 18 HCAPLUS COPYRIGHT 2008 ACS on STN  
 AN 5000:236827 HCAPLUS  
 DN 133:25988  
 TI [H2(C4H10N2)]2(H2PO4)4: hydrothermal synthesis and single crystal structure of an inclusive supramolecular phosphoric salt  
 AU Shi, Faian; Shen, Zhen; You, Xiaozeng; Duan, Chunying  
 CS State Key Laboratory of Coordination Chemistry, Coordination Chemistry Institute, Nanjing University, Nanjing, Peop. Rep. China  
 SO Journal of Molecular Structure (2000), 523, 143-147  
 CODEN: JMO5B4; ISSN: 0022-2860  
 PB Elsevier Science B.V.  
 DT Journal  
 LA English  
 AB The new supramol. phosphoric complex [H2(C4H10N2)]2(H2PO4)4 was obtained by the hydrothermal reaction of piperazine hexahydrate (C4H10N2·6H2O), Zn(OAc)2 with H3PO4 in the molar ratio of 1:1:2 at 180°. The compound was characterized by the means of elemental anal., FTIR, TGA-DTA, and single crystal X-ray anal. The structure was determined with data: monoclinic, space group P21/n, Z = 4, R = 0.0324, Rw = 0.0947. The structure is unique with three (HP04)2- groups and three H2O mols. connecting each other alternatively into a ring by the interaction of H-bonds and (C4H10N2H2)2+ cations reside in the rings to form an infinite 3-dimensional network only by H-bonding interaction.  
 IT 52978-33-3P  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (preparation and crystal structure inclusive supramol. phosphoric salt with 3-dimensional network)  
 RN 52978-33-3 HCAPLUS  
 CN Piperazine, phosphate (1:1:2) (CA INDEX NAME)  
 CM 1  
 CRN 7664-3B-2  
 CMF H3 O4 P



CM 2  
 CRN 110-85-0  
 CMF C4 H10 N2



RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 7 OF 18 HCAPLUS COPYRIGHT 2008 ACS on STN  
 AN 1985:680777 HCAPLUS  
 DN 123:72596  
 TI Insulating articles with high surface electrical resistivity and flame resistance  
 IN Cicchetti, Osvaldo; Pagliari, Alberto; Cipolli, Roberto; Bevilacqua, Alfonso  
 PA Himont Incorp., USA  
 SO Eur. Pat. Appl., 7 pp.  
 CODEN: EPXKDW  
 DT Patent  
 LA English  
 FAN.CNT 1  

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP-----650171	A2	19950426	1994EP-0116940	19941026 <--
EP-----650171	A3	19950809		
EP-----650171	B1	20020925		
CA---2118340	A1	19950427	1994CA-2118340	19941018 <--
JP---07228710	A	19950829	1994JP-0262889	19941026 <--
1993IT-M102264	A	19931026		

 AB Disclosed are elec. insulating polymer articles having high surface resistivity and high flame resistance, essentially comprising 55-90 weight% 21 thermoplastic polymer with elastomeric properties, and 10-45 weight% 21 phosphoric, pyro-, or polyphosphoric acid salts of piperazine, melamine, pyrazine, pyrimidine, or hexahydroprimidine and their derivs.  
 IT 66034-17-1 Piperazine acid pyrophosphate  
 RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)  
 (insulating articles with high surface resistivity and flame resistance containing)  
 RN 66034-17-1 HCAPLUS  
 CN Diphosphoric acid, compd. with piperazine (1:1) (CA INDEX NAME)  
 CM 1  
 CRN 2466-09-3  
 CMF H4 O7 P2



CM 2  
 CRN 110-85-0  
 CMF C4 H10 N2



L25 ANSWER 8 OF 18 HCAPLUS COPYRIGHT 2008 ACS on STN  
 AN 1985:505828 HCAPLUS  
 Correction of: 1985:150354  
 DN 103:105828  
 Correction of: 102:150354  
 OREF 103:16965a,16968a  
 TI Flameproof polymeric compositions  
 IN Berte, Ferruccio; Marclandi, Franco; Binaghi, Marco  
 PA Montedison S.p.A., Italy  
 SO Eur. Pat. Appl., 16 pp.  
 CODEN: EPXKDW  
 DT Patent  
 LA English  
 FAN.CNT 1  

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP-----126454	A2	19841128	1984EP-0105667	19840518 <--
EP-----126454	A3	19851030		
EP-----126454	B1	19871119		
US---4599375	A	19860708	1984US-0610822	19840516 <--
CA---1229197	A1	19871110	1984CA-0454624	19840517 <--
1983IT-0021149	A	19830518		

 OS MARPAT 103:105828  
 AB Self-extinguishing polymer compns. are prepared from, e.g., olefin polymers, polystyrene (9003-53-6), poly(butylene terephthalate) (24968-12-5), SAN (9003-54-7) and ABS (9003-56-9), containing, in 100 parts composition, 20-50 parts piperazine acid pyrophosphate (I) (66034-17-1) or 20-50 parts composition containing 25 parts I and 0-35 parts I substitutes, which include ammonium polyphosphate, melamine (108-78-1), melamine phosphate (41583-09-9), melamine pyrophosphate (15541-60-3), polycarboxypiperazine (32006-42-1), and ethyleneurea-formaldehyde copolymer (28906-87-8), and 0-3 parts TiO2, SiO2, or silicic acid (particle size <0.1 µ). Thus, a composition containing polypropylene (9003-07-0) 73, I 24, lauryl thiopropionate 0.4, mercaptobenzimidazole 1, TiO2 1.4, and Irganox 1010 0.2 part had UL-94 vertical flame rating V-0, combustion time 41 s and 0 index 34.  
 IT 66034-17-1  
 RL: USES (Uses)  
 (flame retardant compns. containing, for polymers)  
 RN 66034-17-1 HCAPLUS  
 CN Diphosphoric acid, compd. with piperazine (1:1) (CA INDEX NAME)  
 CM 1  
 CRN 2466-09-3  
 CMF H4 O7 P2



CM 2  
 CRN 110-85-0  
 CMF C4 H10 N2



L25 ANSWER 9 OF 18 HCAPLUS COPYRIGHT 2008 ACS on STN  
 AN 1985:150354 HCAPLUS  
 DN 102:150354  
 OREF 102:23649a,23652a  
 TI Flameproof polymeric compositions  
 IN Berte, Ferruccio; Marclandi, Franco; Binaghi, Marco  
 PA Montedison S.p.A., Italy  
 SO Eur. Pat. Appl., 16 pp.  
 CODEN: EPXKDW  
 DT Patent  
 LA English  

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP-----126454	A2	19841128	1984EP-00105667	19840518

 R: BE, DE, FR, GB, NL, SE  
 PRAI 1983IT-0000021149 19830518  
 AB A polymer composition having good flame self-extinguishing properties contains acidic piperazine pyrophosphate (I) 20-50; powdered TiO2, SiO2, or silicic acid 0-3; and NH4 polyphosphate, melamine, melamine phosphate or pyrophosphate, polycarboxypiperazine, or ethyleneurea-formaldehyde copolymer 0-25 parts (to substitute all but 25 parts I/100 parts composition. Thus, a specimen containing polypropylene (9003-07-0) 73, acidic I 24, and TiO2 1.4 parts had UL 94 vertical flame rating V-0, combustion time (10 ignitions) 41 s, and 0 index 34.  
 IT 66034-17-1  
 RL: USES (Uses)  
 (acidic, flame retardants containing, for polymers)  
 RN 66034-17-1 HCAPLUS  
 CN Diphosphoric acid, compd. with piperazine (1:1) (CA INDEX NAME)  
 CM 1  
 CRN 2466-09-3  
 CMF H4 O7 P2



CM 2  
 CRN 110-85-0  
 CMF C4 H10 N2



L25 ANSWER 10 OF 18 HCAPLUS COPYRIGHT 2008 ACS on STN  
 AN 1978:190624 HCAPLUS  
 DN 88:190624  
 OREF 88:29973a,29976a  
 TI Syntheses of anthelmintic and antimicrobial preparations  
 AU Akbaev, A. A.  
 CS Inst. Org. Khim., Frunze, USSR  
 SO Org. Khim. Puti Razvit. Khim. Proizvod. Kirg. (1976), 57-9.  
 Editor(s): Afanas'ev, V. A. Publisher: "Ilim", Frunze, USSR.  
 CODEN: J7MCAM  
 DT Conference  
 LA Russian  
 AB The complexes 3CuCl2.4(phenothiazine), bis(hexamethylenetetramine) triphosphate, hexamethylenetetramine salicylate and phenolate, and piperazine sulfosalicylate, glutamate, pyrophosphate, arsenate and nicotinate were prepared and their anthelmintic and antimicrobial properties examined  
 IT 66034-17-1P  
 RL SPN (Synthetic preparation); PREP (Preparation) (preparation and anthelmintic and antimicrobial properties of)  
 RN 66034-17-1 HCAPLUS  
 CN Diposphoric acid, compd. with piperazine (1:1) (CA INDEX NAME)  
 CM 1  
 CRN 2466-09-3  
 CMF H4 O7 P2



CM 2  
 CRN 110-85-0  
 CMF C4 H10 N2



L25 ANSWER 12 OF 18 HCAPLUS COPYRIGHT 2008 ACS on STN  
 AN 1966:42989 HCAPLUS  
 DN 64:42989  
 OREF 64:7966g-h  
 TI The alkaloids of chinese drugs from Aconitum. VII. Thin-layer chromatography for aconite alkaloids  
 AU Chu, Yuan-Lung; Lu, Chih-Chen; Chu, Jen-Hung  
 CS Acad. Sinica, Shanghai, Peop. Rep. China  
 SO Yaoyue Xuebao (1965), 12(6), 381-7  
 CODEN: YXHPAL; ISSN: 0513-4870  
 DT Journal  
 LA Chinese  
 AB cf. CA 63, 16400c. Aconitine, mesaconitine, hypaconitine, delphine, delcosine, methyllycaconitine, and delsemine, were employed for the study of thin-layer chromatog. separation and identification of aconite alkaloids. Basic alumina of activity IV with particle size smaller than 150 mesh was a suitable absorbent. and a mixture of petroleum ether and ether (1:10) was a suitable developing agent.

L25 ANSWER 11 OF 18 HCAPLUS COPYRIGHT 2008 ACS on STN  
 AN 1974:570558 HCAPLUS  
 DN 81:170558  
 OREF 81:26395a,26398a  
 TI Piperazine phosphates as fire retardants for organic polymers  
 IN Rowton, Richard L.  
 PA Jefferson Chemical Co., Inc.  
 SO U.S., 9 pp.  
 CODEN: UDXKAM  
 DT Patent  
 LA English  
 FAR CNT 1  

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US-3810850	A	19740514	197305-0321794	19730108 <--
PRAI 197305-0321794	A	19730108		

AB Piperazine monophosphate [14538-56-8] and the prepared compds. 2-methylpiperazine monophosphate (52978-32-2), piperazine diphosphate [52978-33-3], and piperazine pyrophosphate (I) (52492-62-3) fireproofed epoxy and polyester resins, and polyurethane coatings and foams. Some poly(vinyl acetate) (II) [9003-20-7]-phosphate coatings were intumescent. Thus, piperazine [110-85-0], treated with Na4P2O7 [7722-88-5] in acidic solution gave I. A 5:10:1 I:II (Elmer's Glue)-H2O slurry coated on rigid polyurethane foam and exposed to a blow torch burned without swelling but self-extinguished in the absence of the flame.  
 IT 52978-32-3  
 RL: USES (Uses)  
 (fireproofing agents, for resins)  
 RN 52978-33-3 HCAPLUS  
 CN Piperazine, phosphate (1:2) (CA INDEX NAME)  
 CM 1  
 CRN 7664-38-2  
 CMF H3 O4 P



CM 2  
 CRN 110-85-0  
 CMF C4 H10 N2



L25 ANSWER 13 OF 18 HCAPLUS COPYRIGHT 2008 ACS on STN  
 AN 1966:42988 HCAPLUS  
 DN 64:42988  
 OREF 64:7966g  
 TI Microscopic characterization and identification of pharmaceuticals using ultraviolet spectrophotometry. VI  
 AU Brandstaetter-Kuhnert, M.; Kofler, A.; Hoffmann, R.; Rhi, H. C.  
 CS Univ. Innsbruck, Austria  
 SO Scientia Pharmaceutica (1965), 33(4), 205-30  
 CODEN: SCPHA4; ISSN: 0036-8709  
 DT Journal  
 LA German  
 AB Tables useful in the identification of 90 pharmaceuticals which do not melt sharply are given. They include 2 eutectics for all substances, uv data for most of them, refractive index, and chemical tests for others.



L25 ANSWER 14 OF 18 HCAPLUS COPYRIGHT 2008 ACS on STN  
 AN 1966:42987 HCAPLUS  
 DN 64:42987  
 OREF 64:7966f-g  
 TI Ignition and flame tests of organic pharmaceutical substances  
 AU Morvay, J.; Racz, L.; Gati, L.  
 CS Univ. Med. Sci., Szeged, Hung.  
 SO Gyogyyszereszet (1965), 9(12), 472-3  
 CODEN: GYGAI; ISSN: 0017-6036  
 DT Journal  
 LA Hungarian  
 AB Ignition and (or) flame tests were conducted on 163 organic pharmaceutical compds. The combustion reaction of 19 compds. is described in some detail (mercurisalicilic acid, nicotinic acid, tannin, adrenaline, betaine-HCL, Bi salts of Ca gluconate and lactate, carbamide, quinine salts, ergotamine tartrate, soluble heparin, neostigmine bromide, papaverine-HCL, rutin, K Sb tartrate, sulfanilamide, Na theobromine salicylate).

L25 ANSWER 15 OF 18 HCAPLUS COPYRIGHT 2008 ACS on STN  
 AN 1965:438398 HCAPLUS  
 DN 63:38398  
 OREF 63:6800a-c  
 TI Anthelmintic tablets  
 IN Stephenson, Douglas  
 PA Wellcome Foundation Ltd.  
 SO 6 pp.  
 DT Patent  
 LA Unavailable

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB-----994742		19650610	1960GB-0031223	19600909
PI				
PRAI	GB	19600909		

GI For diagram(s), see printed CA issue.  
 AB The preparation of tablets containing anthelmintics of the bephenium type, I, as an inner core and piperazine (II) in the outer coating is described. The coating of II may be uniform in thickness, or thicker on one side than on the other, or carry a depression on one face. The method of manufacture is described. A typical tablet contains as inner portion I (R = H, R' = 2-thienyl) p-chlorobenzenesulfonate 216.25, alginate acid 2.165, potato starch 43.25, and Mg stearate 3.25 mg. The coating contains II phosphate 260, lactose 78, dextrose monohydrate or sucrose 78, potato starch 26, and Mg stearate 5.2 mg. The completed tablet of thickness 5.75 mm. and diameter 12.8 mm. contains a hole in one face of diameter 4-6 mm. and depth 1.5-2 mm. The tablets allow controlled release of the anthelmintic components.

L25 ANSWER 16 OF 18 HCAPLUS COPYRIGHT 2008 ACS on STN  
 AN 1965:438397 HCAPLUS  
 DN 63:38397  
 OREF 63:6799h,6800a  
 TI Medication compositions disintegrating rapidly in solutions  
 AU Persson, Rolf G. H.; Sjogren, John A.  
 IN Aktiebolag Hassle, Apotekare Paul Nordstroms Fabriker  
 PA 8 pp.  
 DT Patent  
 LA Unavailable  
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR-----1397102		19650430	1960FR-0844547	19601121
PI				
PRAI	SE	19591213		

AB Granular compns. containing a drug or food are mixed with 5% (of mixture) Ca citrate (I) and the mixts. are compressed to give tablets and pills which have good chemical resistance and disintegrate in aqueous solns. Thus, a mixture of active substance 200, I 365, potato starch 60, talc 272, Mg stearate 3, and poly(vinylpyrrolidone) 5 mg. is granulated and compressed. The product is treated at 40-50° with a solution of 8 g. Imhausen excipient in 20 g. CHCl<sub>3</sub> to give a tablet which disintegrates in H<sub>2</sub>O (37°) in 30 s. as compared with 30 min. for a control in which I is replaced by 325 mg. lactose and 40 mg. potato starch.

L25 ANSWER 17 OF 18 HCAPLUS COPYRIGHT 2008 ACS on STN  
 AN 1965:54367 HCAPLUS  
 DN 62:54367  
 OREF 62:9657d-e  
 TI The activity of some anthelmintics against Ascaridia galli in vitro  
 AU Duevara-Pozo, D.; Saenz-Beltran, F.  
 CS Pac. Farm., Granada, Spain  
 SO Kongr. Pharm. Wiss., Vortr. Originalmitt., 23, Muenster, (Westfalen) Ger. (1964), 1963, 369-70  
 DT Journal  
 LA Unavailable  
 AB Activity of 27 tested substances was improved by previous treatment of the animals with hyaluronidase and Tween 80. Hexylresorcinol at <0.0124 was ineffective; at 0.025 and 0.14, the parasite died. Piperazine derivs. (adipate and phosphate) were ineffective below 1.5%, caused muscle tonus, amplitude, and responses to heat and cold to diminish at concns. up to 6%, but no concentration was lethal. The adipate was the most effective. Terramycin was ineffective at <0.24, caused diminished tone, frequency and amplitude up to 14 but was not lethal. Peroxide at 0.25 volume % was paralyzing and resulted in death in 155 and 1 min. at 4 and 10 volume %, resp. The mucoproteins may play a defensive role against intestinal worms.

L25 ANSWER 18 OF 18 HCAPLUS COPYRIGHT 2008 ACS on SIN  
AN 1965:54366 HCAPLUS  
DN 62:54366  
OREF 62:9657b-d  
TI Additive effect of chemically and pharmacologically different diuretics  
AU Heidenreich, O.; Baumeister, L.  
CS Univ. Freiburg, Germany  
SO Klinische Wochenschrift (1964), 42(24), 1236-40  
CODEN: KLWOAS; ISSN: 0023-2173  
DT Journal  
LA German  
AB Female dogs were given intravenous injections followed by infusions of  
etozolin hydrochloride (I), Hg. chlormerodrin (II), and chlorothiazide  
(III) each in its maximum diuretic effective dose. I (50 mg./kg. then 10 mg.  
/kg./hr.) decreased p-aminhippurate clearance (CPAH), free water  
clearance, and tubular reabsorption of Na<sup>+</sup>, K<sup>+</sup>, and Cl<sup>-</sup> by 75% and  
increased urine flow and the urinary excretion of Na<sup>+</sup>, K<sup>+</sup>, and Cl<sup>-</sup>. One  
hr. after I, 2 mg. of Hg/kg. was injected followed by 2 mg. of II/kg./hr.  
It produced further decreases in tubular reabsorption of Na<sup>+</sup>, K<sup>+</sup>, and  
Cl<sup>-</sup> by 68% and further increases in the urinary excretion in Na<sup>+</sup>, K<sup>+</sup>, and  
Cl<sup>-</sup>. III (10 mg./kg., then 15 mg./kg./hr.) increased urine flow and the  
urinary excretion of Na<sup>+</sup>, K<sup>+</sup>, and Cl<sup>-</sup> and decreased CPAH and the  
glomerular filtration rate. I (5 mg./kg.), given 20 min. after III,  
decreased further CPAH glomerular filtration rate, and the tubular  
reabsorption of Na<sup>+</sup>, K<sup>+</sup>, and Cl<sup>-</sup> and increased the excretion of Na<sup>+</sup>, K<sup>+</sup>,  
and Cl<sup>-</sup> in the urine.

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L23 ANSWER 1 OF 3 HCAOLD COPYRIGHT 2008 ACS on STN  
AN CA64:7966g CAOLD  
TI microscopic characterization and identification of pharmaceuticals - (VI)  
AU Brandstaetter-Kuhnert, Maria; Kofler A.; Hoffmann, R. M.; Rhi, H. C.  
IT 52-62-0 55-68-5 57-29-4 57-94-3 62-37-3  
62-46-4 64-65-3 67-45-8 68-91-7 69-44-3 77-36-1  
83-73-8 85-18-7 85-73-4 95-25-0 99-38-7 114-80-7  
116-38-1 118-23-0 125-33-7 126-07-8 127-60-6 129-50-0  
129-51-1 135-09-1 140-95-4 300-37-8 303-81-1 483-04-5  
509-67-1 523-87-5 553-06-0 599-88-2 635-32-5 826-39-1  
866-67-1 1010-59-9 1200-55-1 1212-78-8 1264-51-3 1381-02-8  
1808-12-4 1951-97-9 2079-78-9 2922-44-3 3325-66-4  
3528-84-5 3569-99-1 4592-78-3 7248-28-4 7620-11-3 7640-29-1  
7640-30-4 7640-33-7 7640-35-9 7641-32-9 10099-42-0 10105-90-5  
11019-78-6 94625-66-8 106630-78-8

L23 ANSWER 2 OF 3 HCAOLD COPYRIGHT 2008 ACS on STN  
AN CA63:6800a CAOLD  
TI anthelmintic tablets  
AU Stephenson, Douglas  
PA Wellcome Foundation Ltd.  
DT Patent  
PATENT NO. KIND DATE  
-----  
PI GB-----994742  
IT 1951-97-9 4304-40-9

L23 ANSWER 3 OF 3 HCAOLD COPYRIGHT 2008 ACS on STN  
AN CA62:9657d CAOLD  
TI activity of some anthelmintics against Ascaridia galli  
AU Guevara Pozo, Diego; Saenz-Beltran, F.  
IT 136-77-6 142-88-1 1951-97-9 93505-75-0

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L26 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2008 ACS on STN  
 RN 1991-97-9 REGISTRY  
 ED Entered STN: 16 Nov 1984  
 CN Piperazine, phosphate (8CI, 9CI) (CA INDEX NAME)  
 MF C4 H10 N2 . X H3 O4 P  
 CI COM  
 LC STN Files: BEILSTEIN\*, BIOSIS, CA, CAOLD, CAPLUS, CHEMCATS, CHEMLIST,  
 EMBASE, HSD\*, MSDS-OHS, PS, RTECS\*, TOXCENTER, USPATFULL  
 (\*File contains numerically searchable property data)  
 Other Sources: EINECS\*\*  
 (\*\*Enter CHEMLIST File for up-to-date regulatory information)  
 CM 1  
 CPM 7664-38-2  
 CMF H3 O4 P



CM 2  
 CPM 110-85-0  
 CMF C4 H10 N2



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 REFERENCE 2: 143:249125  
 REFERENCE 3: 108:142292  
 REFERENCE 4: 105:97426  
 REFERENCE 5: 105:17585  
 REFERENCE 6: 103:42732  
 REFERENCE 7: 102:105449  
 REFERENCE 8: 101:177628  
 REFERENCE 9: 99:28107  
 REFERENCE 10: 97:168993

=> d his

(FILE 'HOME' ENTERED AT 21:08:12 ON 08 JAN 2008)

FILE 'HCAPLUS' ENTERED AT 21:08:32 ON 08 JAN 2008

L1 1 US20060167256/PN

FILE 'REGISTRY' ENTERED AT 21:08:55 ON 08 JAN 2008

FILE 'HCAPLUS' ENTERED AT 21:08:55 ON 08 JAN 2008

L2 TRA L1 1- RN : 3 TERMS

FILE 'REGISTRY' ENTERED AT 21:08:55 ON 08 JAN 2008

L3 3 SEA L2

L4 STR

L5 13 L4

L6 STR L4

L7 STR L6

L8 1 L7

E PIPERAZINE/CN

L9 1 E3

L10 958692 46.383.1/RID

L11 1 L7 SAM SUB=L8

L12 STR L4

L13 5 L12 SAM SUB=L10

L14 10973 L12 FULL SUB=L10

SAV TEM L14 J478C1/A

L15 93 L14 AND (H4O7P2 OR H3O4P)

L16 2 L15 AND L3

FILE 'HCAPLUS' ENTERED AT 21:29:30 ON 08 JAN 2008

L17 159 L15 AND (PD<=20040827 OR AD<=20040827 OR PRD<=20040827)

L18 14 L16

L19 12 L18 AND (PD<=20040827 OR AD<=20040827 OR PRD<=20040827)

L20 1 L19 AND L1

L21 11 L19 NOT L20

L22 61 L17 AND L15 (L) PREP+NT/RL

FILE 'HCAOLD' ENTERED AT 21:33:40 ON 08 JAN 2008

L23 3 L15

SEL AN

EDIT E1-E3 /AN /OREF

FILE 'HCAPLUS' ENTERED AT 21:34:39 ON 08 JAN 2008

L24 7 E1-3

L25 18 L21,L24

FILE 'REGISTRY' ENTERED AT 21:36:47 ON 08 JAN 2008

L26 1 E4

=> b hcap

FILE 'HCAPLUS' ENTERED AT 22:07:03 ON 08 JAN 2008

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FILE COVERS 1907 - 8 Jan 2008 VOL 148 ISS 2

FILE LAST UPDATED: 7 Jan 2008 (20080107/ED)

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This file contains CAS Registry Numbers for easy and accurate  
substance identification.

=> d bib abs hitind hitstr 133 tot



L33 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2005:371235 HCAPLUS

DN 142:1412276

TI High-purity piperazine pyrophosphate and method for producing same  
IN Kimura, Ryohji; Murase, Hisashi; Nagahama, Masaru; Kaminoto, Tetsuo;  
Nakano, Shinji

PA Asahi Denka Co., Ltd., Japan

SO PCT Int. Appl., 17 pp.

CODEN: PIKX32

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO2005037806	A1	20050428	2004WO-JP12379	20040827 <--
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, ME, MG, MN, MW, MX, MY, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
FW: BW, GH, GM, KE, LS, MW, ME, NA, SD, SL, SE, TE, UG, ZM, ZW, AM, AZ, BY, EG, EE, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
JP2005120021	A	20050512	2003JP-0356864	20031016 <--
EP-----1674459	A1	20060628	2004EP-072335	20040827 <--
R: DE, FR, GB				
CN-----1845913	A	20061011	CN 2004-80025644	20040827 <--
IN2005KN02679	A	20061103	2005IN-KN02679	20051222 <--
US2006167256	A1	20060727	2006US-0563478	20060105 <--
PRAI 2003IP-0356864	A	20031016	<--	
2004WO-JP12379	W	20040827	<--	
AB Piperazine diphosphate (I) is dehydrated to prepare piperazine pyrophosphate (II) for fireproofing agents for plastics. Thus, I was extruded to give II and added to a polypropylene composition				
IC ICM C07D-295/02				
ICS C09K-021/12				
CC 37-6 (Plastics Manufacture and Processing)				
Section cross-reference(s): 28				
IT Dehydration reaction				
Fireproofing agents				
(high-purity piperazine pyrophosphate for fireproofing agents for plastics)				
IT 66034-17-1P, Piperazine monopyrophosphate				
RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PREP (Preparation); USES (Uses)				
(high-purity piperazine pyrophosphate for fireproofing agents for plastics)				
IT 52978-33-3, Piperazine diphosphate				
RL: RCT (Reactant); RACT (Reactant or reagent)				
(high-purity piperazine pyrophosphate for fireproofing agents for plastics)				
IT 66034-17-1P, Piperazine monopyrophosphate				
RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PREP (Preparation); USES (Uses)				
(high-purity piperazine pyrophosphate for fireproofing agents for plastics)				
RN 66034-17-1 HCAPLUS				
CN Diphosphoric acid, compd. with piperazine (1:1) (CA INDEX NAME)				
CM 1				
CRN 2466-09-3				
CMF H4 07 P2				

L33 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2008 ACS on STN (Continued)



CM 2

CRN 110-85-0

CMF C4 H10 N2



IT 52978-33-3, Piperazine diphosphate  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(high-purity piperazine pyrophosphate for fireproofing agents for plastics)

RN 52978-33-3 HCAPLUS

CN Piperazine, phosphate (1:2) (CA INDEX NAME)

CM 1

CRN 7664-38-2

CMF H3 04 P



CM 2

CRN 110-85-0

CMF C4 H10 N2



RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L33 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2001:782258 HCAPLUS

DN 136:124460

TI Characterization of a new organic-cation monohydrogenmonophosphate dihydrate: C6H16N2HP04.2H2O

AU Baouab, L.; Jouini, A.

CS Universite du Centre, Faculte des Sciences de Monastir, Departement de Chimie, Laboratoire de Chimie du Solide, Monastir, 5000, Tunisia

SO Journal de la Societe Chimique de Tunisie (2001), 4(9),

1053-1062

CODEN: JSCIDP; ISSN: 0253-1208

PB Societe Chimique de Tunisie

DT Journal

LA English

AB A new organic phosphate C6H16N2HP04.2H2O (2,6DMPHP) was prepared by interaction of H3PO4 with the organic mol. 2,6-dimethylpiperazine. This compound crystallizes in monoclinic system space group P21/c, with a 13.271(3), b 11.855(4), c 15.748(4) Å, β 105.22(3)°; Z = 4 (2 mols./Z), d<sub>c</sub> = 1.379, d<sub>m</sub> = 1.367; R = 0.036, R<sub>w</sub> = 0.092 for 3518 reflections. The structural matrix is made up of a three dimensional network of O(W)-H...O, O(P)-H...O and N-H...O H bonds. The thermal decomposition of 2,6DMPHP shows two large endothermic effects at 127 and 152°, corresponding to the elimination of H2O mols. and a set of endotherms, from 170 to 300°, probably due to the evolution of NH3 from the structure. The overall ΔH of the dehydration, deduced from the DSC thermogram, is 82.61 kJ/mol. The IR study, based on theor. analyses and literature data, allows interpretation of the IR spectrum.

CC 78-8 (Crystallography and Liquid Crystals)

Section cross-reference(s): 28, 73

IT Dehydration enthalpy

Dehydration reaction

IR spectra

Thermal decomposition

(of dimethylpiperazinium hydrogen phosphate dihydrate)

IT 402570-39-2P

RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation)

; PREP (Preparation); RACT (Reactant or reagent)

(preparation, crystal structure, IR spectra and thermal decomposition of)

IT 402570-39-2P

RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation)

; PREP (Preparation); RACT (Reactant or reagent)

(preparation, crystal structure, IR spectra and thermal decomposition of)

RN 402570-39-2 HCAPLUS

CN Piperazine, 2,6-dimethyl-, phosphate (1:1), dihydrate (9CI) (CA INDEX NAME)

CM 1

CRN 7664-38-2

CMF H3 04 P



CM 2

CRN 108-49-6

CMF C6 H14 N2



RE.CNT 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD

L33 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2008 ACS on STN (Continued)

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L33 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2008 ACS on SIN

L33 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2008 ACS on SIN (Continued)

AN 1998:729545 HCAPLUS

DN 130:46528

TI Intercalation of nonlinear amines into γ-titanium phosphate

AU Espina, Arduinazu; Jaimez, Enrique; Khainakov, Sergei A.; Trobajo, Camino; Rodriguez, Julio; Garcia, Jose R.

CS Departamento de Química Organica e Inorganica, Universidad de Oviedo, Oviedo, 33071, Spain

SO Journal of Materials Research (1998), 13(11), 3304-3314

CODEN: JMRREE; ISSN: 0884-2914

PB Materials Research Society

DT Journal

LA English

AB The intercalation of amines (aniline, benzylamine, cyclohexylamine, piperidine, pyridine, pyrazine, piperazine, naphthylamine, and indoline) into γ-Ti phosphate, Ti(H2PO4)(PO4)·2H2O, was studied by the batch method and by exposing the host to amine vapor. The changes in the interlayer distance of the solid during the intercalation process were followed by x-ray powder diffraction. The new intercalates were characterized by chemical and thermal anal. and IR spectroscopy. Materials with a monolaminar and/or bilaminar arrangement of amine mols. in the phosphate interlayer region were obtained, as a function of the amine nature. The thermal decomposition of the intercalates (N atmospheric) takes place in three stages: dehydration, amine removal, and phosphate-to-pyrophosphate condensation.

CC 78-3 (Inorganic Chemicals and Reactions)

IT 216674-32-7 216674-50-9 216674-54-3 216674-58-7 216674-61-2

216674-72-5

RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)

(formation from thermal decomposition of γ-titanium phosphate nonlinear amine intercalate)

IT 216674-61-2

RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)

(formation from thermal decomposition of γ-titanium phosphate nonlinear amine intercalate)

RN 216674-61-2 HCAPLUS

CN Phosphoric acid, titanium(4+) salt, compd. with piperazine (4:2:1) (9CI) (CA INDEX NAME)

CM 1

CRN 7664-38-2

CMF H3 O4 P



CM 2

CRN 110-85-0

CMF C4 H10 N2



RE.CNT 63

THERE ARE 63 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d his 127-

(FILE 'HCAOLD' ENTERED AT 21:37:03 ON 08 JAN 2008)

FILE 'REGISTRY' ENTERED AT 21:37:35 ON 08 JAN 2008

FILE 'HCAPLUS' ENTERED AT 21:58:42 ON 08 JAN 2008

		E DEHYDRATION/CT
		E E3+ALL
L27	21710	E2+NT
		E E3+ALL
L28	27969	E3+OLD
		E DEHYDRATION, PHYSIOLOGICAL/CT
		E E3+ALL
L29	21804	E3+OLD
L30	2	L22 AND L27-29
L31	1	L15 (L) FORM+NT/RL
L32	0	L31 AND L27-29
L33	3	L30-31

FILE 'HCAPLUS' ENTERED AT 22:07:03 ON 08 JAN 2008

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